

NOTIFICATION OF WELL SPUD

Spud Date: April 25, 2017

OPERATOR

Operator Name: CIMAREX ENERGY CO Operator Number: 21194

Address: 202 S CHEYENNE AVE STE 1000
TULSA, OK 74103-3001

Well

API No.: 051-24117-00

Name/No. HINES FEDERAL 1H-0235X

SW SW SW SE

Sec: 2 TWP: 10N RGE: 8W County: GRADY

Correspondence Should Be Mailed To

Operator Name:

Address: ,

Surface Casing Cemented By (if job completed)

Operator Name:

Address: ,

INSTRUCTIONS

Please Type or Use Black Ink

District Office must be
notified at least 48 hours
prior to spudding.

Complete and mail within
14 (fourteen) days after spudding
to the Corporation Commission
at the above address.

State EXACT DATE well was
spudded.

District I
115 West 6th Street
Post Office Box 779
Bristow, OK 74010
(918) 367-3396

District II
101 South 6th Street
Post Office Box 1107
Kingfisher, OK 73750
(405) 375-5570

District III
1016 Maple
Post Office Box 1525
Duncan, OK 73533
(405) 255-0103

District IV
703 North Broadway
Ada, OK 74828
(405) 332-3441

I declare that I have knowledge of the contents of this report
and am authorized by my organization to make this report, which
was prepared by me or under my supervision and direction, with
the data and facts stated herein to be true, correct, and
complete to the best of my knowledge and belief.

MARY BARNETT

Signature

DRILLING TECH

Title

Oklahoma Corporation Commission
Oil & Gas Conservation Division
Post Office Box 52000
Oklahoma City, Oklahoma 73152-2000
Rule 165: 10-3-25

Form 1002A

API No.: 35051241170000

Completion Report

Spud Date: April 25, 2017

OTC Prod. Unit No.:

Drilling Finished Date: June 07, 2017

1st Prod Date: August 28, 2017

Completion Date: August 26, 2017

Drill Type: HORIZONTAL HOLE

Min Gas Allowable: Yes

Well Name: HINES FEDERAL 1H-0235X

Purchaser/Measurer: XEC

Location: GRADY 2 10N 8W
SW SW SW SE
235 FSL 2410 FEL of 1/4 SEC
Latitude: 35.36394 Longitude: -98.0157
Derrick Elevation: 0 Ground Elevation: 1278

First Sales Date: 08/28/2017

Operator: CIMAREX ENERGY CO 21194

202 S CHEYENNE AVE STE 1000
TULSA, OK 74103-3001

Completion Type		Location Exception		Increased Density	
X	Single Zone	Order No		Order No	
	Multiple Zone	663278		There are no Increased Density records to display.	
	Commingled				

Casing and Cement							
Type	Size	Weight	Grade	Feet	PSI	SAX	Top of CMT
SURFACE	13 3/8	54.5	J-55	1509	3000	960	SURFACE
INTERMEDIATE	9 5/8	40	HCL-80	10720	5000	1166	7070
PRODUCTION	5 1/2	20	HCO-110	21634	9000	3640	7100

Liner								
Type	Size	Weight	Grade	Length	PSI	SAX	Top Depth	Bottom Depth
There are no Liner records to display.								

Total Depth: 21634

Packer		Plug	
Depth	Brand & Type	Depth	Plug Type
There are no Packer records to display.		There are no Plug records to display.	

Initial Test Data

Test Date	Formation	Oil BBL/Day	Oil-Gravity (API)	Gas MCF/Day	Gas-Oil Ratio Cu FT/BBL	Water BBL/Day	Pumpin or Flowing	Initial Shut-In Pressure	Choke Size	Flow Tubing Pressure
Sep 10, 2017	WOODFORD	496	53.2	3633	7324	1919	FLOWING	3822	23/64	

Completion and Test Data by Producing Formation

Formation Name: WOODFORD

Code: 319WDFD

Class: OIL

Spacing Orders

Order No	Unit Size
661734	640
587488	640
663277	MULTIUNIT

Perforated Intervals

From	To
12155	21608

Acid Volumes

NONE

Fracture Treatments

28,500,571 GALS FLUID AND 25,812,559# SAND
--

Formation	Top
ANHYDRITE	3000
HEEBNER	6789
TONKAWA	7395
COTTAGE GROVE	8149
HOGSHOOTER LIME	8423
CHECKERBOARD LIME	8854
PINK LIME	10241
RED FORK	10346
INOLA	10531
ATOKA	10632
NOVI LIME	10682
MORROW SHALE	10708
CHESTER	10764
MERAMEC	11745
LOWER MERAMEC 1	11843
OSAGE	12044
WOODFORD	12146

Were open hole logs run? No

Date last log run:

Were unusual drilling circumstances encountered? No

Explanation:

Other Remarks

OCC -THIS DOCUMENT IS ACCEPTED BASED ON THE DATA SUBMITTED NEITHER THE FINAL LOCATION EXCEPTION NOR THE FINAL MULTIUNIT ORDERS HAVE BEEN ISSUED. OCC - RESTORING 1002A AFTER NETWORK GOING DOWN NO CHANGE FROM ORIGINAL APPROVAL 10/18/2017.

Lateral Holes

Sec: 35 TWP: 11N RGE: 8W County: CANADIAN

NW NE NW NE

166 FNL 1674 FEL of 1/4 SEC

Depth of Deviation: 11414 Radius of Turn: 225 Direction: 359 Total Length: 9202

Measured Total Depth: 21634 True Vertical Depth: 11639 End Pt. Location From Release, Unit or Property Line: 166

FOR COMMISSION USE ONLY

1137452

Status: Accepted

OKLAHOMA CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION
P.O. BOX 52000
OKLAHOMA CITY, OK 73152-2000
(Rule 165:10-3-1)

API NUMBER: 051 24117

Approval Date: 03/28/2017

Expiration Date: 09/28/2017

Horizontal Hole Oil & Gas

PERMIT TO DRILL

WELL LOCATION: Sec: 02 Twp: 10N Rge: 8W

County: GRADY

SPOT LOCATION: ☐ SW ☐ SW ☐ SE

FEET FROM QUARTER: FROM SOUTH FROM EAST

SECTION LINES: 235 2410

Lease Name: HINES FEDERAL

Well No: 1H-0235X

Well will be 235 feet from nearest unit or lease boundary.

Operator Name: CIMAREX ENERGY CO

Telephone: 9185851100

OTC/OCC Number: 21194 0

CIMAREX ENERGY CO
202 S CHEYENNE AVE STE 1000
TULSA, OK 74103-3001

ROBERT & CAROLYN HINES
137 COUNTY STREET 2750
MINCO OK 73059

Formation(s) (Permit Valid for Listed Formations Only):

Name	Depth	Name	Depth
1 WOODFORD	11586	6	
2		7	
3		8	
4		9	
5		10	

Spacing Orders: 661734
587488

Location Exception Orders:

Increased Density Orders:

Pending CD Numbers: 201606214
201606213

Special Orders:

Total Depth: 22264

Ground Elevation: 1278

Surface Casing: 1500

Depth to base of Treatable Water-Bearing FM: 240

Under Federal Jurisdiction: No

Fresh Water Supply Well Drilled: No

Surface Water used to Drill: No

PIT 1 INFORMATION

Approved Method for disposal of Drilling Fluids:

Type of Pit System: CLOSED Closed System Means Steel Pits

Type of Mud System: WATER BASED

Chlorides Max: 5000 Average: 3000

Is depth to top of ground water greater than 10ft below base of pit? Y

Within 1 mile of municipal water well? N

Wellhead Protection Area? N

Pit is located in a Hydrologically Sensitive Area.

Category of Pit: C

Liner not required for Category: C

Pit Location is ALLUVIAL

Pit Location Formation: ALLUVIUM

D. One time land application -- (REQUIRES PERMIT) PERMIT NO: 17-32208
H. CLOSED SYSTEM=STEEL PITS (REQUIRED - CANADIAN RIVER)

This permit does not address the right of entry or settlement of surface damages.

The duration of this permit is SIX MONTHS, except as otherwise provided by Rule 165: 10-3-1.

Rule 165: 10-3-4 (c) (7) (e) - The Operator shall give 24 Hours notice by telephone to the appropriate District Office of the Conservation Division as to when Surface Casing will be run.

HORIZONTAL HOLE 1

Sec 35 Twp 11N Rge 8W County CANADIAN

Spot Location of End Point: NW NE NW NE

Feet From: NORTH 1/4 Section Line: 165

Feet From: EAST 1/4 Section Line: 1680

Depth of Deviation: 11431

Radius of Turn: 760

Direction: 2

Total Length: 9639

Measured Total Depth: 22264

True Vertical Depth: 11952

End Point Location from Lease,

Unit, or Property Line: 165

Notes:

Category	Description
DEEP SURFACE CASING	3/23/2017 - G71 - APPROVED; NOTIFY OCC FIELD INSPECTOR IMMEDIATELY OF ANY LOSS OF CIRCULATION OR FAILURE TO CIRCULATE CEMENT TO SURFACE ON ANY CONDUCTOR OR SURFACE CASING
HYDRAULIC FRACTURING	3/23/2017 - G71 - OCC 165:10-3-10 REQUIRES: 1) THE CHEMICAL DISCLOSURE OF HYDRAULIC FRACTURING INGREDIENTS FOR ALL WELLS BE REPORTED TO FRACFOCUS USING THE FOLLOWING LINK HTTP://FRACFOCUS.ORG/ WITH NOTICE GIVEN 48 HOURS IN ADVANCE OF FRACTURING TO THE LOCAL OCC DISTRICT OFFICE; AND, 2) PRIOR TO COMMENCEMENT OF FRACTURING OPERATIONS FOR HORIZONTAL WELLS, NOTICE ALSO GIVEN FIVE BUSINESS DAYS IN ADVANCE TO OFFSET OPERATORS WITH WELLS COMPLETED IN THE SAME COMMON SOURCE OF SUPPLY WITHIN 1/2 MILE
PENDING CD - 201606213	3/27/2017 - G64 - (I.O.) 2-10N-8W & 35-11N-8W EST MULTIUNIT HORIZONTAL WELL X661734 WDFD 2-10N-8W X587488 WDFD 35-11N-8W XOTHER 50% 2-10N-8W 50% 35-11N-8W CIMAREX ENERGY CO. REC. 2-10-2017 (JOHNSON)
PENDING CD - 201606214	3/27/2017 - G64 - (I.O.) 2-10N-8W & 35-11N-8W X661734 WDFD 2-10N-8W X587488 WDFD 35-11N-8W XOTHER COMPL. INT. (2-10N-8W) NCT 165' FSL, NCT 0' FNL, NCT 1320' FEL COMPL. INT. (35-11N-8W) NCT 0' FSL, NCT 165' FNL, NCT 1320' FEL NO OP. NAMED REC. 2-10-2017 (JOHNSON)
SPACING - 587488	3/27/2017 - G64 - (640)(HOR) 35-11N-8W EST WDFD POE TO BHL NCT 165' FNL & FSL, NCT 330' FEL & FWL
SPACING - 661734	3/27/2017 - G64 - (640)(HOR) 2-10N-8W EXT 643928 WDFD, OTHER EST OTHER COMPL. INT. NLT 165' FNL/FSL, NLT 330' FEL/FWL (COEXIST SP. ORDER 98732/107705 CSTR, MSSLM)

This permit does not address the right of entry or settlement of surface damages.

051 24117 HINES FEDERAL 1H-0235X

The duration of this permit is SIX MONTHS, except as otherwise provided by Rule 165: 10-3-1.

Rule 165: 10-3-4 (c) (7) (e) - The Operator shall give 24 Hours notice by telephone to the appropriate District Office of the Conservation Division as to when Surface Casing will be run.

TOPOGRAPHIC LAND SURVEYORS OF OKLAHOMA

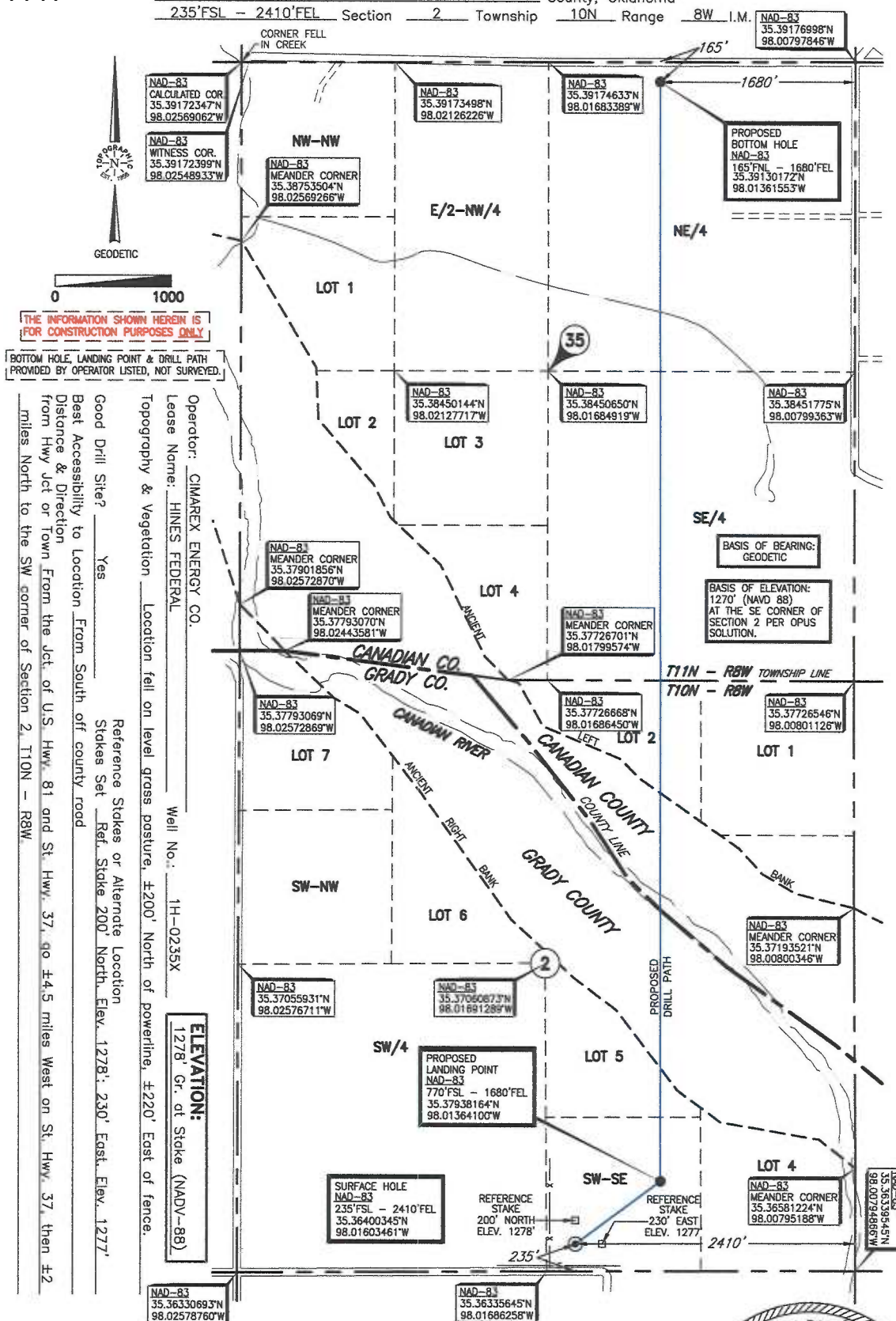
6709 NORTH CLASSEN BLVD., OKLA. CITY, OKLA. 73116 • LOCAL (405) 843-4847 • OUT OF STATE (800) 654-3219
Certificate of Authorization No. 1293 LS

API: 051 24117

GRADY

County, Oklahoma

235' FSL - 2410' FEL Section 2 Township 10N Range 8W I.M.



Revision ☒ A Date of Drawing: October 25, 2016
Invoice # 266133 Date Staked: October 10, 2016 JGW

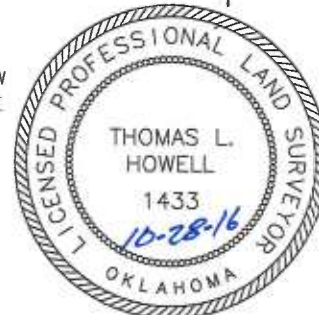
CERTIFICATE:

I, Thomas L. Howell, a Oklahoma Licensed Land Surveyor and an authorized agent of Topographic Land Surveyors of Oklahoma, do hereby certify to the information shown herein.

Thomas L. Howell
Oklahoma Lic. No. 1433

DATUM: NAD-83
LAT: 35.36400345°N
LONG: 98.01603461°W

(This information was gathered with a GPS receiver with ±1 foot Horiz./Vert. accuracy.)



CEMENTING REPORT

Form 1002C
Rev. 2012

API No.

051-24117

OKLAHOMA CORPORATION COMMISSION

Oil & Gas Conservation Division

Post Office Box 52000

Oklahoma City, Oklahoma 73152-2000

OAC 165:10-3-4(i)

This form shall be filed with the Completion Report, (Form 1002A). The signature on this statement must be that of qualified employees of the cementing company and operator to demonstrate compliance with OAC 165:10-3-4(i). It may be advisable to take a copy of this form to location when cementing work is performed.

TYPE OR USE BLACK INK ONLY

*Operator Cimarex Energy	OCC/OTC 21194
*Well Name/No. Hines Federal 1H-0235X	County Grady
*Location SW 1/4 SW 1/4 SW 1/4 SE 1/4 Sec 02 Twp 10N Rge 08W	

Cement Casing Data	Conductor Casing	Surface Casing	Alternative Casing	Intermediate Casing	Production String	Liner
Cementing Date		04/27/17				
*Size of Drill Bit (Inches)		17 1/2				
*Estimated % wash or hole enlargement used in calculations		50%				
*Size of Casing (inches O.D.)		13 3/8				
*Top of Liner (if liner used) (ft.)		N/A				
*Setting Depth of Casing (ft.) from ground level		1,509				
Type of Cement (API Class)		15:85 Poz:C				
In first (lead) or only slurry						
In second slurry		C				
In third slurry		N/A				
Sacks of Cement Used		664				
In first (lead) or only slurry						
In second slurry		296				
In third slurry		N/A				
Vol of slurry pumped (Cu ft)(14.X15.)		1,275				
In first (lead) or only slurry						
In second slurry		400				
In third slurry		N/A				
Calculated Annular Height of Cement behind pipe (ft)		1,509				
Cement left in pipe (ft)		85				

*Amount of Surface Casing Required (from Form 1000)

1500 ft.

*Was cement circulated to Ground Surface?

☒ Yes ☐ No

*Was Cement Staging Tool (DV Tool) used?

☐ Yes ☒ No

*Was Cement Bond Log run?

☐ Yes ☒ No (If so, Attach Copy)

*If Yes, at what depth?

ft

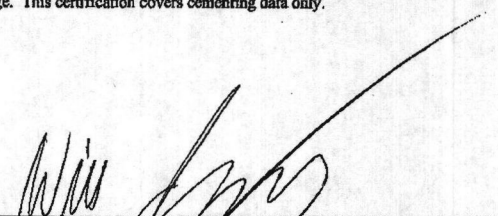
CEMENTING COMPANY AND OPERATOR MUST COMPLY WITH THE INSTRUCTIONS ON REVERSE SIDE OF FORM

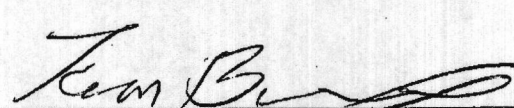
* Designates items to be completed by Operator.

Items not so designated shall be completed by the Cementing Company.

Remarks

*Remarks

CEMENTING COMPANY
I declare under applicable Corporation Commission rule, that I am authorized to make certification, that the cementing of casing in this well as shown in the report facts presented on both sides on both sides of this form are true, correct and complete to the best of my knowledge. This certification covers cementing data only.
 Signature of Cementer or Authorized Representative

OPERATOR
I declare under applicable Corporation Commission rule, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct and complete to the best of my knowledge. This certification covers all well data and information presented herein.
 Signature of Operator or Authorized Representative

Name & Title (Printed or Typed)		William Tarpley	
Cementing Company		Schlumberger	
Address		560 W. Jensen Rd.	
City		El Reno	
State	Oklahoma	Zip	73036
Telephone (AC) Number		405-422-8700	
Date		04/27/17	

Name & Title (Printed or Typed)		Kevin Martin	
Operator		Cimarex Energy	
Address		202 S. Cheyenne, #1000	
City		Tulsa	
State	OK	Zip	74103
Telephone (AC) Number		918-585-1100	
Date		04/27/17	

INSTRUCTIONS

1. A) This form shall be filed by the operator, at the O.C.C. office in Oklahoma City, with the Completion Report (Form 1002A) for a producing well or a dry hole.
- B) An original of this form shall be filed with the Completion Report, (Form 1002A), for each cementing company used on a well.
- C) The cementing of different casing strings on a well by one cementing company may be consolidated on one form.

2. Cementing Company and Operator shall comply with the applicable portions of OAC 165:10-3-4.

3. Set surface casing 50 feet below depth of treatable water to be protected and cement from casing shoe to ground surface or as allowed by OAC 165:10-3-4.

CEMENTING REPORT

Form 1002C
Rev. 2012

OKLAHOMA CORPORATION COMMISSION

Oil & Gas Conservation Division

Post Office Box 52000

Oklahoma City, Oklahoma 73152-2000

OAC 165:10-3-4(i)

API No.

35051241170000

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TYPE OR USE BLACK INK ONLY

*Operator	Cimarex	OCC/OTC	21194
*Well Name/No.	Hines Federal 1H-0235X	County	Grady
*Location	SW 1/4 SW 1/4 SE 1/4 Sec 02	Twp	10N Rge 08W

Cement Casing Data	Conductor Casing	Surface Casing	Alternative Casing	Intermediate Casing	Production String	Liner
Cementing Date				05/10/17		
*Size of Drill Bit (Inches)				12 1/4		
*Estimated % wash or hole enlargement used in calculations				30%		
*Size of Casing (Inches O.D.)				9 5/8		
*Top of Liner (if liner used) (ft.)						
*Setting Depth of Casing (ft.) from ground level				10720		
Type of Cement (API Class)				35.65 Poz: H		
In first (lead) or only slurry				H		
In second slurry						
In third slurry						
Sacks of Cement Used				703		
In first (lead) or only slurry				463		
In second slurry						
In third slurry						
Vol of slurry pumped (Cu ft) (14.X15.)				1,597		
In first (lead) or only slurry				495		
In second slurry						
In third slurry						
Calculated Annular Height of Cement behind pipe (ft)				3,638		
Cement left in pipe (ft)				129		

*Amount of Surface Casing Required (from Form 1000)	_____ ft.
---	-----------

*Was cement circulated to Ground Surface? _____ Yes _____ No	*Was Cement Staging Tool (DV Tool) used? _____ Yes _____ No
*Was Cement Bond Log run? _____ Yes _____ No (If so, Attach Copy)	*If Yes, at what depth? _____ ft

CEMENTING COMPANY AND OPERATOR MUST COMPLY WITH THE INSTRUCTIONS ON REVERSE SIDE OF FORM

* Designates items to be completed by Operator.

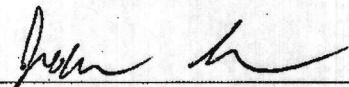
Items not so designated shall be completed by the Cementing Company.

Remarks

*Remarks


CEMENTING COMPANY

I declare under applicable Corporation Commission rule, that I am authorized to make certification, that the cementing of casing in this well as shown in the report facts presented on both sides on both sides of this form are true, correct and complete to the best of my knowledge. This certification covers cementing data only.


Signature of Cementer or Authorized Representative

OPERATOR

I declare under applicable Corporation Commission rule, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct and complete to the best of my knowledge. This certification covers all well data and information presented herein.


Signature of Operator or Authorized Representative

Name & Title (Printed or Typed)		Juan Sapp	
Cementing Company		Schlumberger	
Address		560 W. Jensen Rd.	
City		El Reno	
State	Oklahoma	Zip	73036
Telephone (AC) Number		405-422-8700	
Date		05/10/17	

Name & Title (Printed or Typed)		James Broach	
Operator		Cimarex	
Address		202 S. Cheyenne, Suite 1000	
City		Tulsa	
State	OK	Zip	74103
Telephone (AC) Number		918-585-1100	
Date		05/10/17	

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2. Cementing Company and Operator shall comply with the applicable portions of OAC 165:10-3-4.
3. Set surface casing 50 feet below depth of treatable water to be protected and cement from casing shoe to ground surface or as allowed by OAC 165:10-3-4.

CEMENTING REPORTForm 1002C
Rev. 2012

API No.

35051241170000

OKLAHOMA CORPORATION COMMISSION

Oil & Gas Conservation Division

Post Office Box 52000

Oklahoma City, Oklahoma 73152-2000

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TYPE OR USE BLACK INK ONLY

*Operator	CIMAREX ENERGY	OCC/OTC	21194
*Well Name/No.	HINES FEDERAL 1H-0235X	County	GRADY
*Location	SW 1/4 SW 1/4 SW 1/4 SE 1/4	Sec	02
		Twp	10N
		Rgt	08W

Cement Casing Data	Conductor Casing	Surface Casing	Alternative Casing	Intermediate Casing	Production String	Liner
Cementing Date					06/05/17	
*Size of Drill Bit (Inches)					9"	
*Estimated % wash or hole enlargement used in calculations					20%	
*Size of Casing (inches O.D.)					5.5"	
*Top of Liner (if liner used) (ft.)					N/A	
*Setting Depth of Casing (ft.) from ground level					21634'	
Type of Cement (API Class)					Poz:H	
In first (lead) or only slurry						
In second slurry					N/A	
In third slurry					N/A	
Sacks of Cement Used					3460	
In first (lead) or only slurry						
In second slurry					N/A	
In third slurry					N/A	
Vol of slurry pumped (Cu ft)(14.X15.)					4616.88	
In first (lead) or only slurry						
In second slurry					N/A	
In third slurry					N/A	
Calculated Annular Height of Cement behind pipe (ft)					14534'	
Cement left in pipe (ft)					0	

*Amount of Surface Casing Required (from Form 1000)

ft.

*Was cement circulated to Ground Surface?

Yes X No

*Was Cement Staging Tool (DV Tool) used?

Yes X No

*Was Cement Bond Log run?

Yes No (If so, Attach Copy)

*If Yes, at what depth?

ft

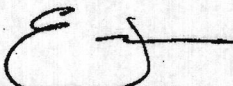
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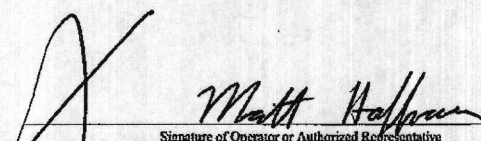
* Designates items to be completed by Operator.

Items not so designated shall be completed by the Cementing Company.

Remarks

*Remarks

CEMENTING COMPANY
I declare under applicable Corporation Commission rule, that I am authorized to make certification, that the cementing of casing in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides on both sides of this form are true, correct and complete to the best of my knowledge. This certification covers cementing data only.
 _____ Signature of Cementor or Authorized Representative

OPERATOR
I declare under applicable Corporation Commission rule, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct and complete to the best of my knowledge. This certification covers all well data and information presented herein.
 _____ Signature of Operator or Authorized Representative

Name & Title (Printed or Typed)	Ernesto Monterroza	
Cementing Company	Schlumberger	
Address	560 W. Jensen Rd.	
City	El Reno	
State	Oklahoma	Zip 73036
Telephone (AC) Number	405-422-8700	
Date	06/06/17	

Name & Title (Printed or Typed)	Matt Hoffman	
*Operator	CIMAREX ENERGY	
*Address	202 S. Cheyenne, Suite 1000	
*City	Tulsa	
*State	OK	*Zip 74103
Telephone (AC) Number	918-585-1100	
*Date	06/06/17	

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Actual Wellpath Report

AWP
Page 1 of 8



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Company	Slot	Hines Federal 1H 0235X
Area	Oklahoma	Well	Subject
Field	Grady County, OK (Cimarex Energy Company) NAD27 / Grid	Wellbore	Hines Federal 1H 0235X Actual
Facility	Hines Federal 1H 0235X Section 2 10N 8W		

REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert Oklahoma SP, Southern Zone (3502), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Ferrmikj
Scale	1.000028	Report Generated	26/Jun/2017 at 8:55:51 AM
Convergence at slot	0.01° West	Database/Source file	OKC/C:\Users\fermikj\AppData\Roaming\Well Explorer\temp\Cimarex Hines Federal 1H 0235X_Svy (06-26-17).xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	1995317.00	738996.00	35°21'50.213"N	98°00'56.538"W
Facility Reference Pt			1995317.00	738996.00	35°21'50.213"N	98°00'56.538"W
Field Reference Pt			609601.22	0.00	33°14'50.100"N	102°32'53.015"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on Hines Federal 1H 0235X (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Rig on Hines Federal 1H 0235X (RKB) to Mean Sea Level	1302.00ft
Vertical Reference Pt	Rig on Hines Federal 1H 0235X (RKB)	Rig on Hines Federal 1H 0235X (RKB) to Mud Line at Slot (Hines Federal 1H 0235X)	25.00ft
MD Reference Pt	Rig on Hines Federal 1H 0235X (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	4.15°



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Company	Slot	Hines Federal 1H 0235X
Area	Oklahoma	Well	Subject
Field	Grady County, OK (Cimarex Energy Company) NAD27 / Grid	Wellbore	Hines Federal 1H 0235X Actual
Facility	Hines Federal 1H 0235X Section 2 10N 8W		

WELLPATH DATA (256 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Comments
0.00†	0.000	53.280	0.00	0.00	0.00	0.00	1995317.00	738996.00	0.00	
25.00	0.000	53.280	25.00	0.00	0.00	0.00	1995317.00	738996.00	0.00	
126.80	0.170	53.280	126.80	0.10	0.09	0.12	1995317.12	738996.09	0.17	
219.60	0.390	63.650	219.60	0.35	0.31	0.51	1995317.51	738996.31	0.24	
311.40	0.450	64.620	311.40	0.69	0.61	1.12	1995318.12	738996.61	0.07	
381.00	0.610	89.790	380.99	0.85	0.72	1.74	1995318.74	738996.72	0.40	
473.10	0.650	87.460	473.09	0.95	0.75	2.75	1995319.75	738996.75	0.05	
565.60	0.810	86.090	565.58	1.10	0.82	3.93	1995320.93	738996.82	0.17	
657.30	0.890	93.290	657.27	1.20	0.82	5.28	1995322.28	738996.82	0.15	
749.50	1.010	99.150	749.46	1.14	0.65	6.80	1995323.80	738996.65	0.17	
841.90	1.000	97.060	841.84	1.03	0.42	8.41	1995325.41	738996.42	0.04	
934.50	1.050	94.850	934.43	0.98	0.25	10.05	1995327.05	738996.25	0.07	
1026.20	1.240	93.860	1026.11	0.97	0.11	11.88	1995328.88	738996.11	0.21	
1087.20	1.210	92.650	1087.10	0.99	0.04	13.18	1995330.18	738996.04	0.06	
1116.90	1.280	93.710	1116.79	1.00	0.00	13.83	1995330.83	738996.00	0.25	
1208.70	1.300	93.910	1208.57	1.02	-0.13	15.89	1995332.89	738995.87	0.02	
1303.20	1.250	96.570	1303.04	0.98	-0.33	17.98	1995334.98	738995.67	0.08	
1397.60	1.280	96.910	1397.42	0.88	-0.57	20.05	1995337.05	738995.43	0.03	
1492.40	1.280	99.970	1492.20	0.73	-0.88	22.14	1995339.15	738995.12	0.07	
1586.80	1.260	105.810	1586.57	0.41	-1.35	24.18	1995341.18	738994.65	0.14	
1681.30	1.360	107.560	1681.05	-0.06	-1.97	26.25	1995343.25	738994.03	0.11	
1775.80	1.180	106.070	1775.52	-0.52	-2.58	28.26	1995345.26	738993.42	0.19	
1870.30	1.150	106.100	1870.01	-0.92	-3.11	30.10	1995347.10	738992.89	0.03	
1964.20	1.170	104.340	1963.89	-1.28	-3.61	31.94	1995348.94	738992.39	0.04	
2059.00	1.650	92.610	2058.66	-1.42	-3.91	34.24	1995351.24	738992.09	0.59	
2153.60	3.720	83.120	2153.15	-0.79	-3.60	38.64	1995355.65	738992.40	2.23	
2248.10	6.200	88.490	2247.29	0.30	-3.10	46.79	1995363.79	738992.90	2.67	
2342.30	7.640	91.520	2340.80	1.09	-3.13	58.14	1995375.14	738992.87	1.58	
2436.70	8.710	91.670	2434.24	1.68	-3.51	71.55	1995388.56	738992.49	1.13	
2531.20	9.350	89.040	2527.57	2.68	-3.59	86.38	1995403.38	738992.41	0.81	
2625.50	9.500	88.420	2620.59	4.14	-3.24	101.82	1995418.82	738992.76	0.19	
2719.90	8.250	87.850	2713.86	5.66	-2.78	116.38	1995433.38	738993.22	1.33	
2814.50	7.770	87.300	2807.54	7.17	-2.22	129.55	1995446.55	738993.78	0.51	
2909.20	8.910	89.210	2901.24	8.57	-1.82	143.27	1995460.28	738994.18	1.24	
3003.70	10.070	90.730	2994.44	9.69	-1.82	158.85	1995475.86	738994.18	1.26	
3098.30	10.270	91.130	3087.56	10.63	-2.09	175.55	1995492.56	738993.91	0.22	
3192.90	9.170	90.170	3180.80	11.60	-2.28	191.52	1995508.53	738993.72	1.18	
3287.50	8.210	89.960	3274.31	12.62	-2.30	205.82	1995522.82	738993.70	1.02	
3381.80	8.370	89.870	3367.62	13.62	-2.28	219.41	1995536.42	738993.72	0.17	
3476.50	8.960	89.440	3461.24	14.74	-2.19	233.68	1995550.69	738993.81	0.63	
3570.90	8.930	88.840	3554.49	16.02	-1.97	248.36	1995565.36	738994.03	0.10	
3665.10	9.420	89.160	3647.49	17.37	-1.71	263.37	1995580.38	738994.29	0.52	
3759.70	10.080	92.320	3740.72	18.31	-1.93	279.39	1995596.39	738994.07	0.90	
3854.30	10.070	93.190	3833.86	18.72	-2.73	295.92	1995612.92	738993.27	0.16	
3948.70	10.260	92.590	3926.78	19.08	-3.57	312.55	1995629.56	738992.43	0.23	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Company	Slot	Hines Federal 1H 0235X
Area	Oklahoma	Well	Subject
Field	Grady County, OK (Cimarex Energy Company) NAD27 / Grid	Wellbore	Hines Federal 1H 0235X Actual
Facility	Hines Federal 1H 0235X Section 2 10N 8W		

WELLPATH DATA (256 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Comments
4043.30	10.150	91.240	4019.89	19.74	-4.13	329.30	1995646.31	738991.87	0.28	
4138.00	9.350	90.740	4113.22	20.62	-4.41	345.34	1995662.35	738991.59	0.85	
4232.50	9.170	90.310	4206.49	21.58	-4.55	360.54	1995677.55	738991.45	0.20	
4327.10	8.520	89.140	4299.96	22.70	-4.48	375.09	1995692.10	738991.52	0.71	
4421.80	8.720	89.850	4393.59	23.85	-4.36	389.28	1995706.29	738991.64	0.24	
4516.50	9.340	89.450	4487.12	25.02	-4.27	404.15	1995721.16	738991.73	0.66	
4611.00	8.560	88.410	4580.46	26.35	-4.00	418.84	1995735.86	738992.00	0.84	
4705.60	8.330	87.550	4674.04	27.85	-3.51	432.73	1995749.74	738992.49	0.28	
4800.30	9.300	85.460	4767.62	29.79	-2.61	447.21	1995764.22	738993.39	1.08	
4894.90	10.030	84.390	4860.88	32.34	-1.20	463.03	1995780.04	738994.80	0.79	
4989.30	9.370	83.920	4953.93	35.10	0.42	478.85	1995795.86	738996.42	0.70	
5083.90	9.330	90.020	5047.27	37.03	1.23	494.18	1995811.19	738997.23	1.05	
5178.50	9.550	94.100	5140.59	37.59	0.67	509.67	1995826.69	738996.67	0.74	
5272.90	9.060	92.820	5233.75	37.77	-0.26	524.91	1995841.92	738995.74	0.56	
5367.30	8.710	86.530	5327.02	38.89	-0.19	539.47	1995856.48	738995.81	1.09	
5461.50	7.960	86.400	5420.22	40.71	0.65	553.10	1995870.11	738996.65	0.80	
5555.90	8.930	88.140	5513.60	42.36	1.30	566.94	1995883.96	738997.30	1.06	
5650.50	8.870	88.170	5607.06	43.89	1.77	581.57	1995898.59	738997.77	0.06	
5745.30	8.310	89.270	5700.80	45.24	2.09	595.73	1995912.74	738998.09	0.62	
5839.90	8.560	89.610	5794.37	46.38	2.22	609.60	1995926.62	738998.22	0.27	
5934.40	8.080	89.560	5887.88	47.47	2.32	623.28	1995940.29	738998.32	0.51	
6028.90	7.710	88.820	5981.48	48.59	2.50	636.25	1995953.27	738998.50	0.41	
6123.30	7.260	88.430	6075.08	49.77	2.80	648.55	1995965.56	738998.80	0.48	
6217.80	6.760	87.830	6168.87	50.98	3.17	660.07	1995977.09	738999.17	0.53	
6312.20	6.040	87.490	6262.68	52.17	3.60	670.59	1995987.61	738999.60	0.76	
6406.90	5.440	87.080	6356.91	53.30	4.05	680.05	1995997.07	739000.05	0.64	
6501.40	5.050	85.440	6451.01	54.48	4.61	688.67	1996005.69	739000.61	0.44	
6596.10	4.120	84.810	6545.41	55.67	5.25	696.21	1996013.23	739001.25	0.98	
6690.70	3.250	81.150	6639.81	56.82	5.97	702.25	1996019.26	739001.97	0.95	
6785.30	2.770	77.250	6734.28	58.09	6.88	707.12	1996024.14	739002.88	0.55	
6880.20	1.970	75.760	6829.10	59.27	7.79	710.94	1996027.96	739003.79	0.85	
6974.70	1.850	74.420	6923.54	60.30	8.60	713.99	1996031.00	739004.60	0.14	
7069.30	1.660	73.590	7018.10	61.29	9.40	716.77	1996033.79	739005.40	0.20	
7163.90	1.500	80.050	7112.66	62.08	10.00	719.31	1996036.32	739006.00	0.25	
7258.70	1.500	69.960	7207.43	62.89	10.64	721.69	1996038.71	739006.64	0.28	
7353.60	0.890	77.610	7302.31	63.61	11.22	723.58	1996040.60	739007.22	0.66	
7448.00	0.940	78.760	7396.70	64.02	11.53	725.06	1996042.07	739007.53	0.06	
7542.90	0.990	95.770	7491.59	64.21	11.60	726.63	1996043.65	739007.60	0.31	
7637.40	1.180	85.690	7586.07	64.33	11.59	728.42	1996045.44	739007.59	0.28	
7731.90	1.160	89.960	7680.55	64.54	11.66	730.34	1996047.36	739007.66	0.09	
7826.60	0.730	67.440	7775.24	64.88	11.90	731.86	1996048.88	739007.90	0.59	
7921.10	1.240	82.920	7869.72	65.35	12.25	733.43	1996050.45	739008.25	0.60	
8015.60	1.310	80.640	7964.20	65.80	12.55	735.51	1996052.53	739008.55	0.09	
8110.10	1.020	57.330	8058.68	66.56	13.18	737.28	1996054.30	739009.18	0.58	
8204.50	1.160	67.250	8153.06	67.49	14.01	738.87	1996055.89	739010.01	0.25	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Company	Slot	Hines Federal 1H 0235X
Area	Oklahoma	Well	Subject
Field	Grady County, OK (Cimarex Energy Company) NAD27 / Grid	Wellbore	Hines Federal 1H 0235X Actual
Facility	Hines Federal 1H 0235X Section 2 10N 8W		

WELLPATH DATA (256 stations)

MD (ft)	Inclination [°]	Azimuth [°]	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	DLS (°/100ft)	Comments
8299.10	1.150	64.640	8247.64	68.39	14.78	740.61	1996057.63	739010.78	0.06	
8393.60	1.040	70.510	8342.13	69.21	15.48	742.28	1996059.30	739011.48	0.17	
8487.90	0.920	71.160	8436.41	69.85	16.01	743.80	1996060.82	739012.01	0.13	
8582.40	0.960	65.670	8530.90	70.52	16.58	745.24	1996062.26	739012.58	0.10	
8677.10	1.080	65.310	8625.58	71.33	17.28	746.78	1996063.80	739013.28	0.13	
8772.00	1.160	64.520	8720.47	72.23	18.06	748.46	1996065.48	739014.06	0.09	
8866.30	1.210	65.350	8814.75	73.19	18.89	750.22	1996067.24	739014.89	0.06	
8960.70	1.130	77.630	8909.13	73.93	19.50	752.04	1996069.06	739015.51	0.28	
9055.30	1.200	76.070	9003.71	74.50	19.94	753.91	1996070.93	739015.94	0.08	
9149.80	1.230	69.820	9098.19	75.23	20.53	755.82	1996072.84	739016.53	0.14	
9244.20	1.170	64.050	9192.57	76.13	21.30	757.64	1996074.66	739017.30	0.14	
9338.70	1.080	62.490	9287.05	77.08	22.14	759.30	1996076.32	739018.14	0.10	
9433.20	1.210	61.150	9381.53	78.09	23.03	760.96	1996077.98	739019.03	0.14	
9527.70	1.550	67.390	9476.00	79.21	24.00	763.01	1996080.04	739020.00	0.39	
9622.30	1.480	60.960	9570.57	80.46	25.09	765.26	1996082.28	739021.09	0.19	
9716.80	1.670	45.260	9665.03	82.16	26.65	767.31	1996084.33	739022.65	0.50	
9811.30	1.620	41.640	9759.49	84.26	28.62	769.17	1996086.20	739024.62	0.12	
9905.50	1.480	43.820	9853.66	86.25	30.49	770.90	1996087.92	739026.49	0.16	
10000.10	1.320	56.960	9948.23	87.85	31.96	772.66	1996089.68	739027.96	0.38	
10094.80	1.090	49.650	10042.91	89.14	33.14	774.26	1996091.28	739029.14	0.29	
10189.40	1.140	54.380	10137.49	90.38	34.27	775.71	1996092.73	739030.27	0.11	
10283.90	1.250	67.280	10231.97	91.44	35.22	777.43	1996094.45	739031.22	0.31	
10378.80	1.410	68.910	10326.85	92.41	36.04	779.47	1996096.49	739032.04	0.17	
10473.60	1.420	67.720	10421.62	93.43	36.90	781.65	1996098.67	739032.90	0.03	
10568.10	1.210	69.570	10516.09	94.36	37.70	783.67	1996100.69	739033.70	0.23	
10662.60	0.990	58.730	10610.58	95.25	38.47	785.30	1996102.32	739034.47	0.32	
10757.10	0.910	74.010	10705.06	95.98	39.10	786.72	1996103.74	739035.10	0.28	
10851.70	1.130	73.840	10799.65	96.57	39.56	788.34	1996105.36	739035.57	0.23	
10946.30	1.340	63.520	10894.23	97.45	40.32	790.22	1996107.24	739036.32	0.32	
11041.00	1.490	64.100	10988.90	98.64	41.35	792.32	1996109.34	739037.35	0.16	
11135.60	1.770	66.050	11083.46	99.94	42.48	794.76	1996111.78	739038.48	0.30	
11230.30	1.950	68.200	11178.11	101.33	43.67	797.59	1996114.62	739039.67	0.20	
11324.80	2.190	72.810	11272.55	102.69	44.80	800.81	1996117.83	739040.80	0.31	
11414.00	2.380	79.330	11361.68	103.79	45.65	804.26	1996121.28	739041.65	0.36	
11455.00	3.420	42.790	11402.63	104.96	46.70	805.93	1996122.95	739042.70	5.05	
11487.00	5.930	24.260	11434.52	107.26	48.91	807.26	1996124.28	739044.91	9.06	
11519.00	9.370	12.130	11466.23	111.39	52.97	808.48	1996125.50	739048.97	11.82	
11550.00	13.180	6.980	11496.63	117.43	58.94	809.44	1996126.46	739054.95	12.70	
11582.00	16.480	6.300	11527.56	125.61	67.08	810.38	1996127.41	739063.08	10.33	
11613.00	20.210	4.890	11556.98	135.36	76.79	811.32	1996128.35	739072.79	12.12	
11644.00	23.260	3.190	11585.77	146.84	88.24	812.12	1996129.14	739084.24	10.05	
11676.00	26.330	359.130	11614.82	160.23	101.65	812.37	1996129.39	739097.65	10.97	
11707.00	30.160	355.450	11642.12	174.78	116.29	811.64	1996128.66	739112.29	13.57	
11739.00	33.470	355.360	11669.31	191.45	133.10	810.29	1996127.31	739129.11	10.34	
11771.00	36.050	357.300	11695.60	209.52	151.31	809.13	1996126.15	739147.31	8.77	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Company	Slot	Hines Federal 1H 0235X
Area	Oklahoma	Well	Subject
Field	Grady County, OK (Cimarex Energy Company) NAD27 / Grid	Wellbore	Hines Federal 1H 0235X Actual
Facility	Hines Federal 1H 0235X Section 2 10N 8W		

WELLPATH DATA (256 stations)

MD (ft)	Inclination [°]	Azimuth [°]	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	DLS [°/100ft]	Comments
11802.00	39.290	0.460	11720.14	228.38	170.24	808.78	1996125.80	739166.25	12.16	
11834.00	43.430	2.760	11744.15	249.50	191.37	809.39	1996126.41	739187.37	13.78	
11865.00	47.280	3.710	11765.93	271.55	213.38	810.64	1996127.67	739209.39	12.61	
11896.00	51.520	3.060	11786.10	295.08	236.88	812.03	1996129.05	739232.88	13.77	
11928.00	54.780	2.870	11805.29	320.67	262.44	813.35	1996130.37	739258.45	10.20	
11959.00	57.830	3.060	11822.49	346.46	288.20	814.69	1996131.71	739284.21	9.85	
11991.00	60.920	2.900	11838.79	373.99	315.70	816.12	1996133.14	739311.70	9.67	
12022.00	64.070	2.860	11853.10	401.47	343.15	817.50	1996134.52	739339.16	10.16	
12054.00	67.220	2.670	11866.30	430.61	372.27	818.90	1996135.93	739368.28	9.86	
12085.00	70.060	2.140	11877.59	459.47	401.11	820.11	1996137.14	739397.12	9.30	
12117.00	73.720	1.650	11887.53	489.85	431.50	821.12	1996138.14	739427.51	11.53	
12148.00	76.230	1.000	11895.57	519.75	461.43	821.81	1996138.83	739457.44	8.35	
12180.00	78.440	0.480	11902.58	550.92	492.65	822.21	1996139.23	739488.66	7.09	
12212.00	80.880	0.260	11908.33	582.33	524.13	822.42	1996139.44	739520.14	7.65	
12243.00	83.220	359.960	11912.61	612.95	554.83	822.47	1996139.50	739550.84	7.61	
12275.00	85.320	359.300	11915.81	644.69	586.66	822.27	1996139.29	739582.68	6.88	
12306.00	86.400	359.250	11918.05	675.49	617.58	821.88	1996138.90	739613.60	3.49	
12338.00	87.080	358.660	11919.87	707.31	649.52	821.29	1996138.32	739645.54	2.81	
12369.00	88.620	359.060	11921.03	738.16	680.49	820.68	1996137.70	739676.51	5.13	
12400.00	91.260	359.700	11921.06	769.05	711.49	820.34	1996137.36	739707.51	8.76	
12432.00	93.200	0.330	11919.82	800.94	743.46	820.35	1996137.37	739739.48	6.37	
12464.00	92.740	0.610	11918.16	832.83	775.42	820.61	1996137.64	739771.44	1.68	
12558.00	92.950	2.320	11913.49	926.60	869.27	823.01	1996140.04	739865.29	1.83	
12653.00	92.800	2.540	11908.73	1021.44	964.06	827.04	1996144.06	739960.09	0.28	
12747.00	92.590	3.090	11904.31	1115.31	1057.85	831.65	1996148.67	740053.87	0.63	
12842.00	93.020	2.740	11899.66	1210.18	1152.61	836.47	1996153.50	740148.64	0.58	
12936.00	91.940	2.250	11895.59	1304.05	1246.43	840.56	1996157.58	740242.46	1.26	
13030.00	92.030	1.920	11892.33	1397.93	1340.31	843.98	1996161.00	740336.35	0.36	
13125.00	91.790	2.240	11889.17	1492.81	1435.20	847.43	1996164.45	740431.23	0.42	
13220.00	92.000	1.300	11886.03	1587.68	1530.10	850.36	1996167.38	740528.14	1.01	
13314.00	91.540	0.920	11883.12	1681.50	1624.03	852.18	1996169.20	740620.08	0.63	
13409.00	91.390	0.950	11880.69	1776.32	1718.99	853.73	1996170.75	740715.04	0.16	
13503.00	92.190	0.600	11877.76	1870.11	1812.94	855.00	1996172.02	740808.98	0.93	
13598.00	91.690	0.460	11874.54	1964.86	1907.88	855.88	1996172.90	740903.93	0.55	
13693.00	92.310	359.190	11871.23	2059.53	2002.82	855.59	1996172.61	740998.87	1.49	
13787.00	92.160	358.750	11867.56	2153.08	2096.73	853.90	1996170.92	741092.78	0.49	
13881.00	91.540	359.030	11864.53	2246.63	2190.66	852.08	1996169.10	741186.72	0.72	
13976.00	90.460	358.840	11862.87	2341.22	2285.63	850.31	1996167.34	741281.69	1.15	
14071.00	90.800	358.860	11861.82	2435.81	2380.60	848.41	1996165.43	741376.67	0.36	
14165.00	92.090	356.590	11859.45	2529.18	2474.49	844.68	1996161.70	741470.56	2.78	
14260.00	91.510	356.260	11856.47	2623.27	2569.26	838.76	1996155.78	741565.33	0.70	
14354.00	91.290	357.440	11854.17	2716.48	2663.09	833.59	1996150.61	741659.16	1.28	
14449.00	91.540	355.090	11851.83	2810.54	2757.85	827.41	1996144.43	741753.92	2.49	
14543.00	90.890	354.600	11849.83	2903.28	2851.45	818.96	1996135.98	741847.52	0.87	
14638.00	90.920	354.260	11848.33	2996.91	2945.99	809.74	1996126.76	741942.07	0.36	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Company	Slot	Hines Federal 1H 0235X
Area	Oklahoma	Well	Subject
Field	Grady County, OK (Cimarex Energy Company) NAD27 / Grid	Wellbore	Hines Federal 1H 0235X Actual
Facility	Hines Federal 1H 0235X Section 2 10N 8W		

WELLPATH DATA (256 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	DLS ft/100ft	Comments
14732.00	90.950	354.660	11846.80	3089.55	3039.54	800.67	1996117.69	742035.62	0.43	
14827.00	90.890	354.200	11845.27	3183.17	3134.08	791.45	1996108.47	742130.16	0.49	
14922.00	91.420	355.230	11843.36	3276.87	3228.65	782.70	1996099.72	742224.74	1.22	
15016.00	91.230	358.140	11841.18	3370.04	3322.46	777.27	1996094.29	742318.55	3.10	
15111.00	90.770	359.590	11839.53	3464.61	3417.42	775.39	1996092.41	742413.51	1.60	
15205.00	90.920	359.700	11838.14	3558.31	3511.41	774.80	1996091.82	742507.50	0.20	
15300.00	90.860	358.740	11836.66	3652.95	3606.39	773.51	1996090.53	742602.48	1.01	
15394.00	91.200	358.840	11834.97	3746.52	3700.35	771.53	1996088.55	742696.45	0.38	
15489.00	91.140	359.590	11833.03	3841.15	3795.32	770.22	1996087.25	742791.42	0.79	
15583.00	91.110	359.930	11831.19	3934.85	3889.30	769.83	1996086.85	742885.41	0.36	
15678.00	90.920	0.730	11829.51	4029.63	3984.29	770.38	1996087.40	742980.39	0.87	
15772.00	90.860	0.620	11828.05	4123.44	4078.27	771.49	1996088.51	743074.38	0.13	
15867.00	90.950	1.200	11826.55	4218.28	4173.25	772.99	1996090.01	743169.36	0.62	
15961.00	90.890	1.420	11825.04	4312.15	4267.21	775.14	1996092.16	743263.32	0.24	
16056.00	91.050	1.580	11823.43	4407.03	4362.16	777.63	1996094.65	743358.28	0.24	
16151.00	92.770	0.910	11820.26	4501.85	4457.08	779.69	1996096.71	743453.20	1.94	
16245.00	92.860	359.430	11815.65	4595.51	4550.97	779.97	1996096.99	743547.09	1.58	
16340.00	93.170	359.240	11810.65	4690.04	4645.83	778.87	1996095.89	743641.95	0.38	
16434.00	93.170	359.150	11805.45	4783.55	4739.68	777.55	1996094.57	743735.80	0.10	
16522.00†	93.114	359.363	11800.63	4871.10	4827.54	776.41	1996093.43	743823.66	0.25	Crossed Section 16522' MD (11800.63' TVD) 0 FSL, 1616' FEL X: 1996093.43, Y: 743823.66 Lat: 35°22'37.960"N Long: 98°00'47.172"W
16529.00	93.110	359.380	11800.25	4878.06	4834.52	776.33	1996093.36	743830.65	0.25	
16624.00	93.110	358.460	11795.09	4972.52	4929.37	774.55	1996091.57	743925.50	0.97	
16718.00	92.490	358.420	11790.50	5065.95	5023.22	771.99	1996089.01	744019.35	0.66	
16812.00	92.120	359.400	11786.72	5159.48	5117.13	770.20	1996087.22	744113.26	1.11	
16907.00	92.120	359.440	11783.21	5254.09	5212.06	769.24	1996086.26	744208.19	0.04	
17001.00	92.060	358.230	11779.78	5347.62	5305.97	767.33	1996084.35	744302.11	1.29	
17096.00	92.120	357.140	11776.31	5441.95	5400.83	763.50	1996080.52	744396.97	1.15	
17190.00	90.830	359.340	11773.89	5535.41	5494.75	760.61	1996077.63	744490.89	2.71	
17285.00	91.200	359.970	11772.21	5630.10	5589.73	760.04	1996077.06	744585.88	0.77	
17380.00	92.160	0.880	11769.42	5724.86	5684.68	760.75	1996077.77	744680.83	1.39	
17474.00	92.090	1.280	11765.94	5818.66	5778.60	762.52	1996079.54	744774.75	0.43	
17569.00	92.090	359.750	11762.47	5913.40	5873.53	763.37	1996080.39	744869.69	1.61	
17663.00	92.190	358.410	11758.96	6006.96	5967.45	761.86	1996078.88	744963.61	1.43	
17758.00	92.120	359.380	11755.39	6101.50	6062.37	760.03	1996077.05	745058.53	1.02	
17852.00	92.090	3.100	11751.94	6195.29	6156.26	762.06	1996079.08	745152.43	3.95	
17947.00	92.960	1.120	11747.75	6290.14	6251.10	765.56	1996082.58	745247.27	2.27	
18041.00	92.680	358.910	11743.13	6383.77	6344.98	765.58	1996082.60	745341.15	2.37	
18136.00	92.090	358.310	11739.17	6478.24	6439.87	763.28	1996080.30	745436.04	0.89	
18230.00	92.150	357.470	11735.70	6571.62	6533.74	759.82	1996076.84	745529.92	0.90	
18325.00	91.880	357.770	11732.36	6665.94	6628.60	755.88	1996072.90	745624.78	0.42	
18419.00	91.910	357.710	11729.25	6759.30	6722.48	752.17	1996069.19	745718.65	0.07	
18514.00	91.820	359.130	11726.16	6853.78	6817.39	749.56	1996066.58	745813.57	1.50	
18608.00	91.910	0.190	11723.10	6947.44	6911.34	749.00	1996066.02	745907.52	1.13	
18703.00	91.850	0.340	11719.98	7042.17	7006.28	749.44	1996066.46	746002.47	0.17	
18797.00	91.910	1.010	11716.90	7135.94	7100.23	750.54	1996067.56	746096.41	0.72	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Company	Slot	Hines Federal 1H 0235X
Area	Oklahoma	Well	Subject
Field	Grady County, OK (Cimarex Energy Company) NAD27 / Grid	Wellbore	Hines Federal 1H 0235X Actual
Facility	Hines Federal 1H 0235X Section 2 10N 8W		

WELLPATH DATA (256 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [ft/100ft]	Comments
18892.00	91.910	1.110	11713.73	7230.75	7195.16	752.30	1996069.32	746191.35	0.11	
18986.00	91.970	0.150	11710.55	7324.52	7289.10	753.33	1996070.35	746285.29	1.02	
19081.00	91.910	359.810	11707.33	7419.21	7384.04	753.30	1996070.32	746380.24	0.36	
19175.00	91.910	1.250	11704.20	7512.97	7477.98	754.17	1996071.19	746474.18	1.53	
19270.00	91.910	1.320	11701.03	7607.80	7572.91	756.30	1996073.32	746569.11	0.07	
19364.00	92.860	358.890	11697.12	7701.47	7666.82	756.47	1996073.49	746663.02	2.77	
19459.00	91.940	357.360	11693.14	7795.86	7761.68	753.37	1996070.39	746757.88	1.88	
19553.00	91.850	357.340	11690.03	7889.15	7855.53	749.02	1996066.04	746851.73	0.10	
19648.00	91.910	359.020	11686.92	7983.58	7950.42	746.01	1996063.03	746946.63	1.77	
19742.00	91.910	0.480	11683.78	8077.24	8044.37	745.60	1996062.62	747040.58	1.55	
19837.00	91.450	0.510	11681.00	8172.01	8139.32	746.42	1996063.44	747135.54	0.49	
19931.00	90.920	0.190	11679.05	8265.78	8233.30	746.99	1996064.01	747229.52	0.66	
20026.00	90.860	359.560	11677.58	8360.51	8328.29	746.78	1996063.80	747324.51	0.67	
20120.00	91.050	359.060	11676.01	8454.16	8422.27	745.65	1996062.67	747418.49	0.57	
20215.00	90.950	359.710	11674.35	8548.81	8517.25	744.63	1996061.65	747513.47	0.89	
20309.00	91.020	358.430	11672.74	8642.43	8611.22	743.11	1996060.13	747607.45	1.36	
20404.00	91.020	357.340	11671.05	8736.84	8706.14	739.60	1996056.62	747702.37	1.15	
20498.00	91.450	358.260	11669.02	8830.24	8800.05	735.99	1996053.01	747796.28	1.08	
20593.00	91.450	358.260	11666.62	8924.71	8894.97	733.11	1996050.13	747891.21	0.00	
20687.00	91.350	358.480	11664.32	9018.20	8988.91	730.44	1996047.46	747985.14	0.26	
20781.00	91.450	359.060	11662.02	9111.76	9082.86	728.42	1996045.44	748079.10	0.63	
20876.00	91.540	359.490	11659.54	9206.38	9177.82	727.22	1996044.24	748174.06	0.46	
20971.00	91.480	359.750	11657.04	9301.05	9272.78	726.59	1996043.61	748269.03	0.28	
21065.00	91.510	0.650	11654.59	9394.80	9366.75	726.92	1996043.94	748362.99	0.96	
21160.00	91.540	1.090	11652.06	9489.61	9461.70	728.36	1996045.38	748457.95	0.46	
21254.00	91.510	0.260	11649.56	9583.40	9555.66	729.47	1996046.48	748551.91	0.88	
21349.00	91.510	0.020	11647.06	9678.13	9650.63	729.70	1996046.72	748646.88	0.25	
21443.00	91.570	359.770	11644.53	9771.84	9744.59	729.53	1996046.54	748740.85	0.27	
21538.00	91.510	0.080	11641.98	9866.55	9839.56	729.40	1996046.42	748835.82	0.33	
21604.00	91.540	359.320	11640.22	9932.32	9905.53	729.06	1996046.07	748901.80	1.15	
21634.00	91.540	359.320	11639.41	9962.21	9935.52	728.70	1996045.72	748931.78	0.00	Actual BHL 21634' MD (11639.41' TVD) 166' FNL, 1674' FEL X: 1996045.72, Y: 748931.78 Lat: 35°23'28.480"N Long: 98°00'47.756"W

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Hines Federal 1H 0235X PBHL	11431.02	9935.74	721.64	1996038.66	748932.00	35°23'28.482"N	98°00'47.841"W	point



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Company	Slot	Hines Federal 1H 0235X
Area	Oklahoma	Well	Subject
Field	Grady County, OK (Cimarex Energy Company) NAD27 / Grid	Wellbore	Hines Federal 1H 0235X Actual
Facility	Hines Federal 1H 0235X Section 2 10N 8W		

WELLPATH COMPOSITION - Ref Wellbore: Hines Federal 1H 0235X Actual Ref Wellpath: AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	1087.20	BHI Generic gyro - northseeking (Standard)	Gyros	Hines Federal 1H 0235X Actual
1087.20	11414.00	BHI Generic gyro - northseeking (Standard)	Gyro 5-14-2017	Hines Federal 1H 0235X Actual
11414.00	21604.00	BHI AutoTrak Curve (Standard)	BHI ATC	Hines Federal 1H 0235X Actual
21604.00	21634.00	Blind Drilling (std)	Projection to bit	Hines Federal 1H 0235X Actual